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IN THE CLAIMS

Please cancel claims 6-7 and 11-12 without prejudice. Allowed claims 4-5, and newly presented claim 23 are given below.

1-3. (canceled)

4. (currently amended) A method for providing data packet congestion control for a data network having a buffer circuit, each data packet comprising a priority, the method comprising the steps of:

- determining ~~a the~~ particular service flow associated with ~~a the~~ data packet;
- detecting a ~~current~~ data packet flow rate through the data network for the particular service flow associated with the data packet;
- quantizing the data packet flow rate into at least one level;
- detecting a buffer circuit depth;
- determining the priority associated with ~~the a~~ current data packet;
- processing the ~~current~~ packet in response to the current data packet flow rate, the data packet priority, and the current buffer circuit depth; and
- determining a probability of dropping ~~the a~~ data packet using the ~~current~~ data packet flow rate, the data packet priority, and the ~~current~~ buffer circuit depth to access, from a matrix of plots indicating the probability of dropping the data packet, each of the plots within the matrix of plots indicating the packet drop probability as a function of the buffer circuit depth.

5. (Currently amended) A method for providing data packet congestion control for a data network having a buffer circuit, each data packet comprising a priority, the method comprising the steps of:

- determining ~~a the~~ particular service flow associated with ~~a the~~ data packet;
- detecting a ~~current~~ data packet flow rate through the data network for the particular service flow associated with the data packet;
- quantizing the data packet flow rate into at least one level;
- detecting a buffer circuit depth;

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determining the priority associated with the a current data packet;
processing the ~~current~~ packet in response to the current data packet flow rate, the data packet priority, and the current buffer circuit depth; and
determining a probability of dropping the a data packet using the ~~current~~ data packet flow rate, the data packet priority, and the ~~current~~ buffer circuit depth to access, from a matrix of plots indicating the probability of dropping the data packet, each of the plots within the matrix of plots indicating the packet drop probability as a function of the buffer circuit depth with plots that have the same shape and parameters as the plots used for random early Discard congestion control techniques.

6-22. (canceled)

23. (new) A method for providing data packet congestion control for a data network having a buffer circuit, each data packet having a priority associated therewith, the method comprising the steps of:

determining a particular service flow associated with a data packet;
detecting a current data packet flow rate through the data network for the particular service flow associated with the data packet;
quantizing the current data packet flow rate into one of four different flow rate categories by comparing the service flow's data packet flow rate with a minimum data rate threshold, a mid-level data rate threshold and a maximum data rate threshold, a first of the four different flow rate categories corresponding to a flow rate that is less than the minimum data rate threshold, a second category corresponding to a flow rate that is greater than the minimum threshold but less than the mid-level threshold, a third category corresponding to a flow rate that is greater than the mid-level threshold but less than the maximum threshold and a forth category corresponding to a flow rate that is greater than the maximum threshold;
determining the priority associated with the data packet; and
processing the data packet in response to the current data packet flow rate category, the data packet priority, and a current buffer circuit depth.